

INDIVIDUALS WITH COCHLEAR IMPLANTS IN EDUCATIONAL SETTINGS

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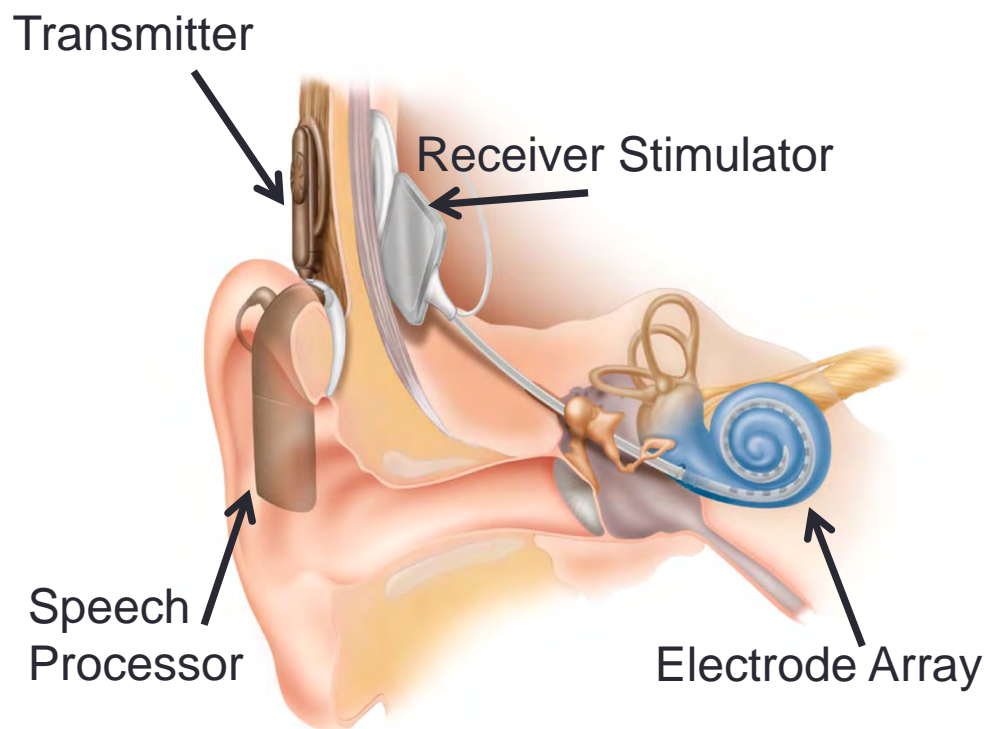
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Outline

- Basic Overview of Cochlear Implants
- Decision Making Process
- Childcare/Educational Recommendations (Birth-College)

How does the cochlear implant work?



- Externally worn processor picks up sound and codes it into a "map"
- Signal is sent across the skin by FM radio waves
- Computer chip under skin behind the ear sends signals to electrodes in cochlea
- Electrodes stimulate auditory nerve
- Brain learns to interpret signal as meaningful sound

Cochlear implant simulation:

www.pbs.org/saf/1205/features/Interactive/intro1.htm Acoustic simulations of Alan Alda's voice through a cochlear implant with 1, 4, 16, and 22 channels.

* CI Demographics - United States

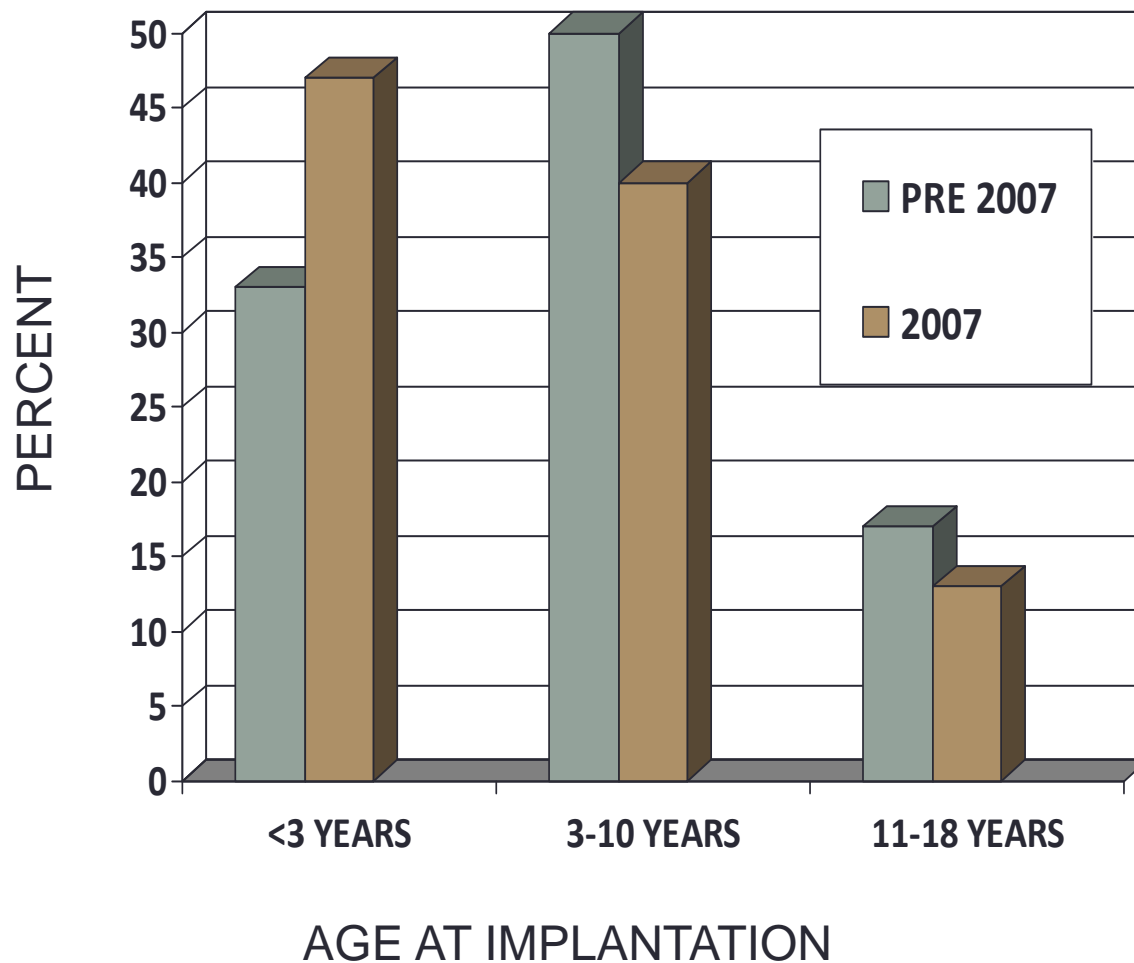
- Approximately 42,600 adults have cochlear implants
- At least 28,400 children have received them
- Implant manufacturers:
 - Advanced Bionics California
 - Cochlear Americas Australia
 - Med-El Corporation Austria



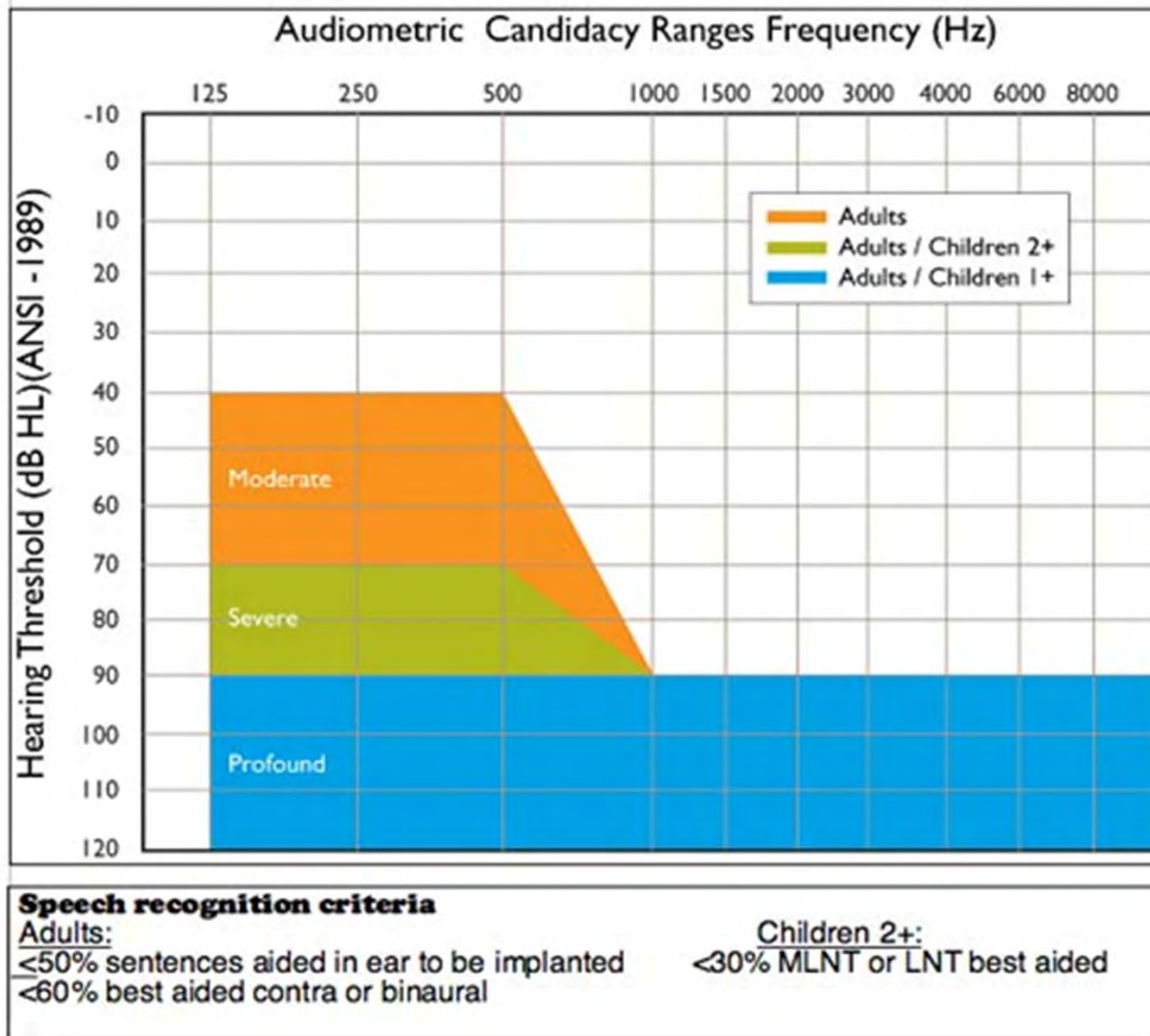
**National Institute on Deafness and Other Communication Disorders, 12/ 2010*



Worldwide, is there a trend towards implanting younger children?



Cochlear Implant Candidacy Criteria



Source: http://www.audiologyonline.com/management/uploads/articles/081709_huartfig1.jpg

Team Approach to Candidacy Determination

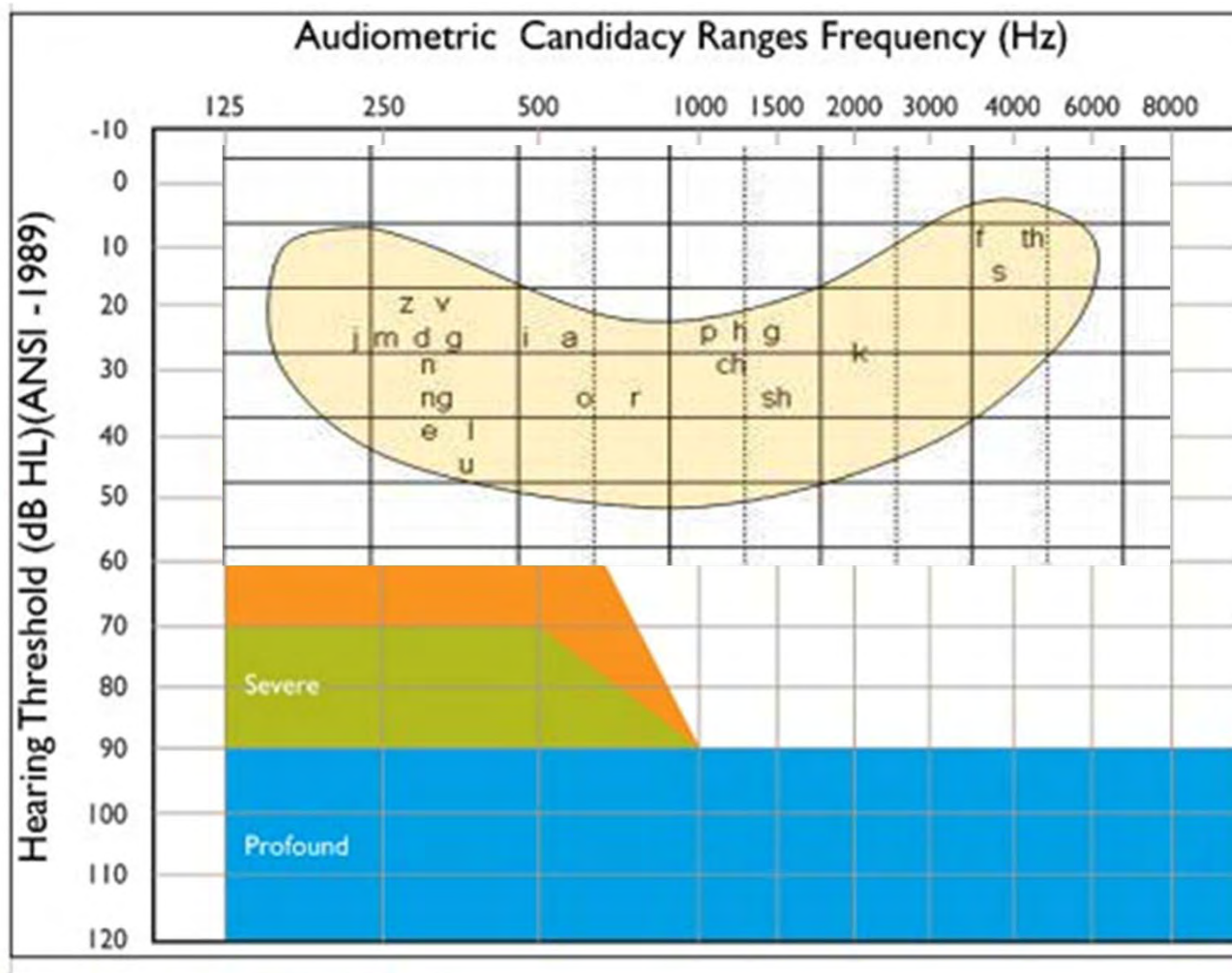
- Adult:
 - Surgeon, audiologist, psychologist or social worker
- Child:
 - Audiological consultation and evaluation
 - Developmental evaluation by psychologist
 - Speech and language evaluation
 - Family support interview by psychologist
 - Medical evaluation by surgeon
 - Other disciplines as needed (educators, ophthalmology, genetics, neurology)
- Follow-up capacity (parents, childcare and/or school supports)



Parent Perspective

- Not “eyeglasses”
- Be honest about the amount of follow-up work that is necessary for success
- A collaborative team approach is vital
- Ask a lot of questions and do your research
- Be realistic about the results – can be varied
- Understand that nothing is perfect but many people find it worth the effort

Cochlear Implants Provide Greater Access to Speech



Sources: http://www.audiologyonline.com/management/uploads/articles/081709_huartfig1.jpg
<http://www.phsa.ca/AgenciesAndServices/Services/BCEarlyHearing/ForFamilies/Glossary.htm>

How Does It Help?

- Improved audibility for soft/moderate sounds
- Improved distance hearing
- Improved spoken language development
- Enhanced speechreading
- Improved speech understanding without visual cues
- Enjoyment of music
- Reduction of tinnitus

We cannot precisely predict...

- Amount of understanding without speechreading
- Understanding in situations with groups of people talking
- Challenges the presence of noise will present
- Telephone use
- Improved clarity of an individuals' speech
- Music appreciation

Predictors for a Limited Outcome

- Long duration profound hearing loss
- Very malformed or ossified cochlea
- Age 4 years and older with no auditory experience prior to implant
- Early language deprivation
- Cognitive impairment
- Not a “driven communicator”
- Poor family support
- Lack of appropriate services

One Size Does Not Fit All

- Services and supports are determined by the child's educational needs
- Understand that the setting may look differently based on the child's needs and the community
- Helpful transition guidelines and checklists:
 - <http://www.childrenshospital.org/clinicalservices/Site2143/Documents/Transition%20Guidelines%202010Final.pdf>
 - http://www.handsandvoices.org/pdf/PARC_2011.pdf
 - <http://www.earfoundation.org.uk/shop/items/100>

Typical Services Needed by a Child with a Cochlear Implant

- Checking and troubleshooting the externally worn processor
- Room acoustical modifications (reduce noise and echo)
- “Horseshoe” seating in group learning time
- One talker at a time helps!
- FM educational amplification
- Speech and language therapy focused on learning to listen with a CI
 - May need some outside therapy and/or mentoring
- Direct service and consultation from a teacher of the deaf
- Support for development of social skills
- Safety precautions

Typical Services Needed by a Child with a Cochlear Implant, cont.

- Annual audiological evaluation (more frequent if a hearing aid is used in the other ear)
- Annual speech and language evaluation
- Psychoeducational evaluation approximately every three years, by a psychologist experienced with children who are deaf
- Parent support group

Accommodations Options

Auditory & Visual

- Remote Microphone Hearing Assistance Technologies (ex. Personal FM System)



- Good speaker communication techniques
- Preferential seating
- Modification of room set up

Thanks to Eileen Peterson

Accommodations Options Visual & Academic

- Notetaking
- Peer supports
- Copy of teacher's notes (printed materials)
- Tutoring
- Interpreters (Sign, Oral, Cued Speech)

Thanks to Eileen Peterson

Accommodations Options

Visual & Academic

- Communication Access Realtime Translation (CART)
- C-Print
- Captioning for video presentations (www.cfv.org)
- Testing accommodations
- Visual alerting systems

Thanks to Eileen Peterson

Check out www.pepnet.org

College Experiences from a Mom

- Recognize that your young adult will probably be stubborn about asking for accommodations and supports
- Will have to let them stumble and trip
- Accept that you truly can do nothing
- Again, for us it is worth it!

Summary

- Implantation is a choice
- A team approach is a MUST!
 - Cochlear Implant Team
 - Early Intervention/School Age Supports
- Patience
- Determination
- Thank you for all you do!

Question and Answer